

## CLAIMS

Sub A1  
1. A method for storing data that has at least some entries with multiple value attributes, comprising the steps of:

5        profiling the data to determine whether the data should be in stored in an attribute table or, alternatively, in a merged table and an overflow table; and  
         storing the data optimally based on the profiling step.

10       2. The method as described in Claim 1 wherein the entries with single value attributes are stored in the merged table.

15       3. The method as described in Claim 1 wherein the entries with multiple value attributes are stored in the overflow table.

20       4. The method as described in Claim 1 wherein the overflow table is an attribute table.

Sub A2  
25       5. The method as described in Claim 1 wherein a majority of the data is stored in the merged table and a small set of additional values for the multiple value attributes are stored in the overflow table.

6. The method as described in Claim 1 wherein the profiling step parses the data to identify entries with single value attributes.

5        7. The method as described in Claim 1 wherein the profiling step parses the data to identify given operations that are performed on the data once stored.

8. The method as described in Claim 1 wherein the  
10 data is stored in a relational database backing store.

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9. A method for storing data that has at least some entries with multiple value attributes, comprising the steps of:

profiling the data to determine whether the data should  
5 be stored in per attribute tables or in a merged table and an overflow table;

storing the information optimally according to the profiling step; and

keeping pointers for future operations on the data in  
10 the merged and overflow tables.

11. The method as described in Claim 9 wherein a majority of the data is stored in the merged table and a small set of additional values for the multiple value  
15 attributes are stored in the overflow table.

12. The method as described in Claim 9 wherein the profiling step is performed as a function of a number of data entries having multiple value attributes.

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13. The method as described in Claim 9 wherein the profiling step is performed by identifying operations that will be performed on the data once stored.



15. A database schema for a directory service having a backing store, comprising:

a first table for storing data for entries having single value attributes; and

5 a second table for storing data for entries having multiple value attributes;

wherein a majority of the entries have single value attributes and a small set of the entries have multiple value attributes.

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16. The database schema as described in Claim 15 wherein the second table is a per attribute table.

17. The database schema as described in Claim 15  
15 wherein the directory service is implemented according to a Lightweight Directory Access Protocol (LDAP).

18. The database schema as described in Claim 17 wherein the backing store is a relational database.

20

19. A directory service, comprising:

a directory organized as a naming hierarchy having a plurality of entries each represented by a unique identifier;

5 a relational database management system having a backing store for storing directory data;

a database schema, comprising:

a first table for storing data for entries having single value attributes; and

10 a second table for storing data for entries having multiple value attributes;

wherein a majority of the entries have single value attributes and a small set of the entries have multiple value attributes.

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20. The directory service as described in Claim 19 wherein the directory is compliant with the Lightweight Directory Access Protocol (LDAP).

21. In a directory service having a directory organized as a naming hierarchy, the hierarchy including a plurality of entries each represented by a unique identifier, the improvement comprising:

5 a relational database management system having a backing store for storing directory data according to a schema comprising;

a first table for storing data for entries having single value attributes; and

10 a second table for storing data for entries having multiple value attributes;

wherein a majority of the entries have single value attributes and a small set of the entries have multiple value attributes.

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22. In the directory service as described in Claim 21 wherein the directory is compliant with the Lightweight Directory Access Protocol (LDAP).

23. A method for storing data that has at least some entries with multiple value attributes, comprising the steps of:

storing data for entries having single value attributes  
5 in a first table;

storing data for entries having multiple value attributes in a second table; and

wherein a majority of the entries have single value attributes and a small set of the entries have multiple  
10 value attributes.

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